

CRYOCOOLER WITH OIL LUBRICATED COMPRESSOR ABSTRACT OF THE DISCLOSURE

A system including (i) a primary loop including a first oil compressor configured to raise the pressure of a refrigerant flowing through the primary loop, an oil separator configured to separate oil contaminant from the refrigerant, a valve configured to return the separated oil back to the first oil compressor, at least one heat exchanger, and a first expansion element; and (ii) a secondary loop including a primary/secondary heat exchanger, the primary/secondary heat exchanger also forming a part of the primary loop; wherein the refrigerant includes constituents (a) that function as a solvent of the oil contaminant which fail to be separated from the refrigerant and (b) that at least substantially condense in the primary/secondary heat exchanger.